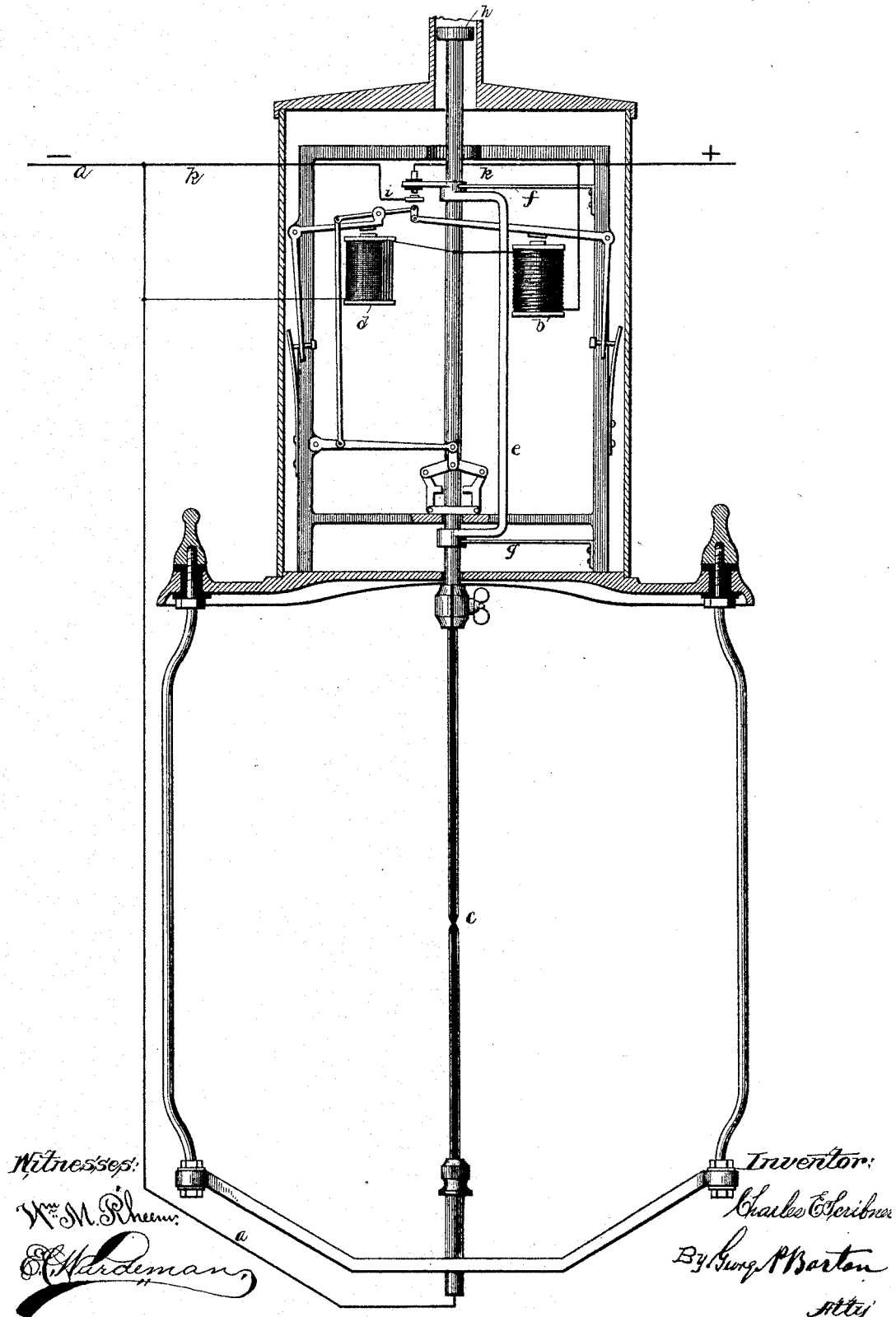


(No Model.)

C. E. SCRIBNER.
ELECTRIC ARC LAMP.

No. 491,604.

Patented Feb. 14, 1893.



UNITED STATES PATENT OFFICE.

CHARLES E. SCRIBNER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN
ELECTRIC COMPANY, OF SAME PLACE.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 491,604, dated February 14, 1893.

Application filed October 30, 1890. Serial No. 369,797. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. SCRIBNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Automatic Cut-Outs for Arc Lamps, (Case No. 233,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to electric arc lamps and its object is to provide mechanical means operated automatically by the rod at a certain point in its descent or whenever the descent of the rod may be impeded, whereby the lamp may be shunted out of circuit. Thus the circuit may be maintained around a lamp which has ceased to feed, or one in which the carbons have been consumed. Heretofore cut outs dependent upon the position of the clutch mechanism, and hence upon the length or electro motive force of the arc have been employed.

My invention herein consists, speaking generally, in providing yielding guides for the carbon rod in connection with a circuit closer adapted to be closed whenever the guides shall be loaded with the whole or any considerable portion of the weight of the rod. The cut out is placed in the circuit of a direct shunt around the lamp. The main circuit extends through the lifting magnet, and thence through the carbons and out. The shunt circuit extends from the main circuit before reaching the lifting magnet to a contact of the cut out carried upon or controlled by the yielding or swinging guide, the opposing contact of the cut out being preferably fixed, and from the opposing or fixed cut out the shunt circuit may be extended directly to the line out. Thus when the cut out is closed the lamp is directly short circuited.

Any suitable mechanical means directly operated by the weight of the rod being transferred thereto from the clutch mechanism may be employed.

In my invention herein I have mounted the guide for the rod upon a yielding support and placed one of the contacts of the cut out upon this yielding guide. When the rod passes

freely through its guide the guide will not be loaded with the weight of the rod and hence will hold the cut out open. If, however, the rod shall stick in the guide so that any considerable amount of the weight of the rod shall rest thereon, this increase of load will cause the guide to yield and thus close the shunt at the cut out.

My invention will be more readily understood by reference to the accompanying drawing, in which—I have shown a side elevation of an electric arc lamp partly in section embodying my invention. The circuit *a* may be traced through the lifting magnet *b* and thence to the frame of the lamps, thence through the carbons *c*, and thence out to line. An ordinary fine wire feeding magnet *d* is connected in the shunt around the carbons *c* and acts in the usual manner to operate the clutch to feed the carbon as the carbons are consumed. The guide *e* for the carbon rod may be of any suitable form, but it must be provided with a yielding support in order that it may be lowered whenever the weight of the rod or a substantial portion of the weight of the rod is placed thereon. I have provided the adjustable flat springs *f g* upon which the yoke *e* forming the guide is suspended. These springs *f g* are secured each at one end to the frame of the lamp and upon their projecting free ends the yoke *e* is mounted. Thus by means of the yoke *e* provided with openings through which the rod passes and the springs *f g* I provide a yielding guide for the rod. Whenever the rod passes freely through the openings in the ends of the yoke the springs *f g* will be loaded only by the weight of the yoke itself. If, however, the rod should stick in the guide a portion of the weight of the rod will be placed upon the springs *f g*, and thus they will be flexed and the guide will be lowered. A suitable stop *h* provided on the rod is so placed that when the carbons are consumed or nearly so this stop *h* will rest upon the guide *e*, thus bringing the weight of the rod upon the guide, thereby loading the springs *f g* with the weight thereof so as to lower the position of the guide. Now it is this yielding rod guide or other suitable mechanism, the position of which is changed by

the weight of the rod being transferred thereto from the clutch, which in connection with a circuit closer *i* constitutes my invention. The contacts of the circuit closer or cut out are included in the direct shunt *k* around the lamp; these contacts being controlled by the yielding rod guide, or, speaking more particularly, by a portion of the lamp mechanism which is adapted to be changed as to position by the weight of the rod being placed thereon. Specifically I have shown the lower contact of the cut out stationary, while the upper contact is mounted upon an arm extended from the yielding yoke or guide *e*. The tension of the springs *f g* is so adjusted that the cut out will be closed when the springs are loaded by a whole or substantial part of the weight of the rod *h*, and whenever such weight is removed the tension of the springs will act to raise the guide *e* so as to open the cut out.

I have thus described specifically one form of my apparatus. It is evident, however, that my invention admits of various modifications which would readily suggest themselves to those skilled in the art and I there-

fore do not limit myself to the details of construction shown.

Having thus described my invention I claim as new and desire to secure by Letters Patent:—

1. A direct shunt around an electric lamp, said shunt containing a circuit closer, in combination with the carbon rod and a yielding guide for the carbon rod adapted to maintain said cut out opened or closed accordingly as the weight of the rod is placed upon or removed from the said yielding guide.

2. The combination with the carbon rod of an electric arc lamp, of a yielding guide therefor, contact points controlled by said guide to be closed when the weight of the rod comes upon the guide, and a shunt circuit about the lamp including said contact points, substantially as described.

In witness whereof I hereunto subscribe my name this 23d day of October, A. D. 1890.

CHARLES E. SCRIBNER.

Witnesses:

ELLA EDLER,
GEORGE L. CRAGG.